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ABSTRACT

Domain-specific knowledge can be processed so that analytical/critical thinking in verbal and written discourse is encouraged in the classroom by using a guided design strategy intended to solve open-ended problems. Each of the four operations in the strategy (state the goal, generate ideas, prepare a plan, and take action) make use of the thinking modes of analysis, synthesis, and evaluation. The strategy can be useful in integrating thinking skills into course content by adapting thinking modes to a format for critical analysis of the content of the course. Two critique forms were devised to enhance student participation in verbal and written exchanges between students and peer groups in an introductory course at Rutgers entitled Development and Criticism of Broadcasting. The forms were adapted from two similar strategies developed earlier. The critique forms provide students with a means of "knowing." The facts and the process are used together to develop skills in thinking. (Two figures are included.) (RS)

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KNOWLEDGE VS KNOWING: THE FACTS AND THE PROCESS OF TEACHING THINKING SKILLS

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In The Goal of Critical Thinking: from Educational Ideal to Educational Reality published by the American Federation of Teachers, Educational Issues Department, Debbie Walsh and Richard Paul include a first chapter section called "From 'Knowledge to 'Knowing'." In that section the difference between memorization and understanding, in moving from knowledge to knowing is examined. There is no denial that knowledge is essential to learning of all kinds. One cannot think critically about something without knowledge. But what is expressed clearly is that it is difficult to remember what is not understood and that when knowledge is organized to give it meaning, when information is put into some context it is much more likely to be remembered. What is important to "knowing" is to relate information to what we already know, to convert rote memorization to deeper interpretive forms where we attempt to evaluate or give meaning to experience. Research has shown that the way information is elaborated and organized in memory affects its accessibility and usefulness. It has been found that reasoning skills and problem-solving strategies together with a sophisticated knowledge base of domain-specific knowledge and general knowledge are the characteristics of learning that turn novices into experts.

It is the purpose of this paper to demonstrate how domain-specific knowledge can be processed so that analytical/critical thinking in verbal and written discourse is encouraged in the classroom. Focus is

on adapting the Guided Design decision-making strategy to critical techniques useful for evaluating knowledge communicated in a large class.

In an introductory course, Development and Criticism of Broadcasting, with over sixty students enrolled, two critique forms were devised to enhance student participation in verbal and written exchanges between students and instructor as well as among students in peer groups. These forms helped to achieve the primary objectives of the course which were to enable students to evaluate developmental and historical events and to be able to analyze and criticize program content and broadcasting formats from past and present.

The first idealized format was adapted from a form originated by Samuel Postlethwait, Professor of Biology at Purdue University, who believes that even in a course in Biology with as many as three hundred students there should be two-way communication. Twenty-minute presentations whether lecture, film, or demonstration were followed by student written responses. (See Figure 1). The second format was adapted from the core of the decision-making procedure devised by Charles E. Wales, Robert Stager, and Anne Nardi, published in Professional Decision-Making, in 1987. (See Figure 2).

The Postlethwait form asks for five responses to factual material presented in the first twenty minutes of classtime. Students are asked to qualify the source of facts, give a statement regarding the credibility, provide a brief summary, identify the central question

Figure 1

EVALUATION OF TELEVISION PROGRAMS

YOUR NAME_____

DATE_____

NAME OF PROGRAM_____

TYPE OF PROGRAM_____

PRESENTED BY_____

1. What is the basis for the information presented in the program? Check one or more of the following, if applicable.

   _____Scientific facts or experiments _____Experience _____Personal Opinion

   _____Fiction _____Literature survey _____Trivial information Other_____

2. What is the major question raised in the presentation? (Write your answer as a question, followed by a question mark).

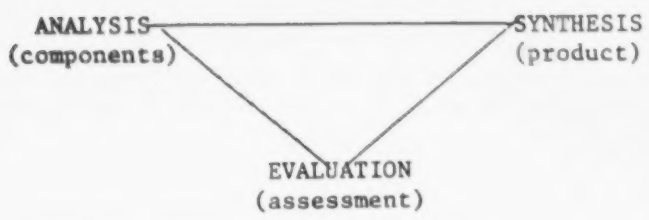
3. Do you think the presentation is convincing or believable? Briefly state why.

4. Summarize the content of the presentation focusing on what you see as the major question. Use examples from what you observed to develop the ideas needed to answer the question you have written.

5. Give one example of how the content of the presentation has some relevance to your life in immediate, day-to-day situations (preferably a single situation). Be specific. Give a personal or practical example.

Figure 2

THINKING IT OVER



ANALYSIS (observed facts, assumptions, opinions)

A. Plot (structure)
Identify the situation, sequence of events.

B. Characters
Whose idea is it? Who is involved?

C. Action
What happens?

D. Scene
Where does it take place?

E. Performance
Is it spontaneous or acted out?
How is it done? Are there skills involved?

SYNTHESIS (values in the final product)

A. Aesthetic (artistic composition)
How skillfully was it put together (writing, design of costumes, scenery, lighting, properties, music, editing of camera work)?

What kind of attention was paid to the rhythm of the presentation?
How long was it? How many segments were there? Were there interruptions?

B. Entertainment (performer-audience relationship)
What emotional effect does it have?
For whom is it intended?
What consequences could it have?
What consequences should it have?
What need does it fulfill?
What costs are involved? Who pays?

C. Purposive (persuasive appeal)
Why was it broadcast?
Who is primarily responsible?
How believable is it?
How serious is it?
How convincing or persuasive is it?
How does it affect your daily life?

Figure 2 (continued)

THINKING IT OVER (continued)

SYNTHESIS (values in the final product)

D. Educational (intellectual appeal)
What is the major theme of the story or presentation?
What patterns of thought, human relationships, knowledge of facts or processes are expressed?

How does it contribute toward a better understanding of the world in which we live?

EVALUATION (decisions or judgments about the presentation)

A. Critical assessment compared to other media events such as legitimate theatre, cinema, radio, reading newspapers, essays, stories, novels, poetry or other print forms, music concerts, live sports, etc.

B. Critical assessment compared to other similar television programs, or compared to written criticism.

C. Personal assessment of how valuable it is to you and the affect it has on your feelings, attitudes, interests, and goals.

raised, and give an example of relevancey to their own experience. This is a relatively brief form which students can respond to quickly and without cumbersome details.

The Wales, Stager, and Nardi form concentrates on three thinking modes -- analysis, synthesis, and evaluation -- used in decision-making. It asks for an identification of the situation or sequence of events (similar to Postlethwait's "What is the major question raised in the presentation?"), an examination of the values contained in the material (synthesis), and an assessment based on comparisons and personal goals and attitudes (evaluation). Evaluation is similar to Postlethwait's request for an example of how the content of the presentation has some relevance to your life in immediate, day-to-day situations.

Both forms, shown in Figure 1 and Figure 2, have been reworded so that they suit the content of the broadcasting course. Students were allowed to become involved in thinking processes leading to evaluation of form and content. For example, a thirty-minute television program would be viewed in class. One of the critique forms, distributed and explained beforehand, would be used to guide student responses to what they saw and heard on the screen. In some cases they would be written responses to be handed in. In other cases students would use the critques as a guide for discussion either in peer groups or by the class and the instructor. The Postlethwait form was appropriate for use in a single class period. The Wales, Stager, Nardi form

requires more time. The analysis portion can be considered in considerable detail. The synthesis requires speculation as to what the content or form could have been or should have been. And the evaluation considers the program from a particular point of view: aesthetic, purposive, educational, entertainment, or a mix of two or more. When this form is used for small peer group discussions it becomes clear that students view the same programs with quite different perspectives. It takes a considerable length of time for differences of opinion to be expressed and more time to try to arrive at a group consensus.

From student statements one can see how analytical and critical skills were being put to work. The following are taken from papers that were written in a take-home assignment after viewing a thirty-minute program of Adam Smith's Money World:

> My goal in this paper is to critique the production of Adam Smith's Money World by explaining the format and the various modes of communication used throughout the program.

She explains in the body of the paper how some of the visual elements are portrayed.

> The program then switches to an area of visual aids, narrated by Adam Smith. Here, there is a picture of a bull, split into 3 different parts, also a bar graph is displayed showing different ups and downs of the stock market. Again, after this, we are switched to another live studio interview with three experts on the stock market. Again they are posed questions, such as stating reasons for the recent surge in the market. It then switches quickly to a tape of two men from the Dow Jones who compare the Dow Jones to others, such as Standard and Poors. And lastly, it switches back to the live studio interview with the three experts.

Another student summarizes the program with an evaluative statement.

> Adam Smith's Money World is an example of purposive television. The show is designed to inform its target group and probably attempts to attract average people to get involved in the world of money. Entertainment is not of prime importance although to viewers who have interests in money matters and stocks the show may be considered to have value as entertainment.

A third student refers to the discussion he had in a peer group.

> As I was watching the Adam Smith show I was looking at the production aspect of the show. In my group we talked more about what the show delivered to its audience. I found myself comparing this show to others that we have watched. I was thinking of shows such as CBS Evening News, McNeil/ Lehrer Report, Wall Street Week, and even the Phil Donahue Show.

Another example.

> After viewing Adam Smith's Money World I decided to critique and evaluate the show according to the production. Now, for a television major it's important to give close attention to the type of show, how the show is laid out, different shots used, studio set-up, directing/blocking. All these factors will complement what the speakers are saying which will make the show more effective to the viewers.

In these statements and in other more complete analyses it can be seen that students are using knowledge and discovering how to perceive elements of form along with content. They are also developing communication skills by putting thoughts to work both in written form and in verbal discourse rather than simply memorizing facts or choosing from a list of possible right answers.

The Guided Design strategy described in Professional Decision-Making is intended primarily for solving open-ended problems. Each of four Operations -- State the Goal, Generate Ideas, Prepare a Plan,

and Take Action -- make use of the thinking modes -- Analysis, Synthesis, Evaluation. By adapting the thinking modes to a format for critical analysis of television programs or other visual and literary forms (perhaps even reports or documents) the scheme can be put to good use in integrating thinking skills into course content. Because video tapes can be stopped and started, or repeated, they are particularly suited to studying techniques of broadcasting. This capability makes it possible to think reflectively and reasonably about material that deliberately appeals to the visual and auditory senses. Robert Ennis' definition of critical thinking states, "Critical thinking is reflective and reasonable thinking that is focused on deciding what to believe or do."

Perhaps even more important is the view expressed in "Encounter on the Narrow Ridge: Martin Buber interpreted by Maurice Friedman." Friedman says, "The meaning of what is communicated cannot be defined by one party, it must be discovered through dialogue. A value is not something I invent, as Sartre would have it, but a quality we discover."

The critique forms illustrated here help to provide students with a means for "knowing." The facts and the process are used together to develop skills in thinking.

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